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Smart Soles

Navigation for the Differently Abled

I wish to build an IoT connected insoles to assist the differently-abled population (sight or sound impaired, for instance) safely navigate to their destination using directions provided in the form of haptic feedback from the shoes.

My idea of this device would consist of the following:

- 4 x Vibrating motor (or any low current motor) – two in each shoe
- 2 x Motor Drivers – each can drive up to 3 motors
- Wi-Fi chip to fetch instructions from a server – these instructions will trigger the motors when user needs to change their trajectory
- GNSS / GPS chip to get position of the user – this is a necessary input in determining when to activate the motors

Considerations: If GPS turns out to be too expensive, can be figure out a lower cost alternative to localize the user using Wi-Fi perhaps? The tradeoff would be cost vs. accuracy.

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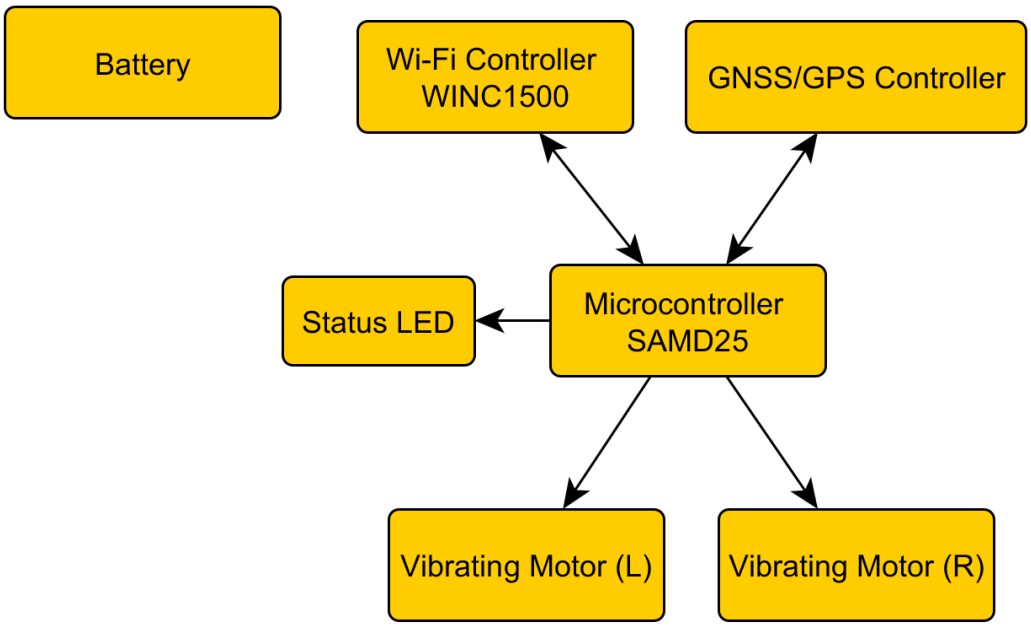
Simple System Diagram



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Detailed System Diagram